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Agricultural Education and the teaching of Agriculture and Domestic Science at the Second Congressional District Agricultural School, Tifton, Georgia. :-: :-: :-: :-:

BY

K. C. MOORE, Agriculturist

MISS RUSSELL LASSETER, Teacher of Domestic Science

Bulletin No. 1 **March 1st, 1909.**

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FACULTY

W. G. ACREE - Principal
K. C. MOORE - Agriculturist
MISS RUSSELL LASSETER, Domestic Science

Other teachers will be selected as the growth of the school demands.

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Agricultural Education
and the
Second Congressional District Agricultural School

[AN ADDRESS BY PROF. K. C. MOORE BEFORE TIFT COUNTY FARMERS UNION FEB. 4, 1909.]

The teaching of practical scientific agriculture in the high school grades of our state schools is a recent thing with us. It is yet in its experimental stage so far as the courses of study are concerned. There have been few schools of this kind. We are clearing new ground and planting a few seed in this field of work; and are doing the best we know how with the limited means we have and the limited information of the experiences of others in this particular work.

Very few people believe in teaching farming at a school. No doubt you know men who have no faith in it, and who think this school is a foolish undertaking and a waste of money and bound to fail. You can recall the time when this kind of thing was said of Medical, Law, Technological, Engineering, etc., schools; and yet these schools are now recognized by all men as necessary and able to do better by their students than was formerly done when young men studied medicine and law in doctors' and lawyers' offices and as apprentices at the forge and work bench. Men of almost all other callings are educated for them in schools established for this purpose. Farming is the most important and most requiring of information of all vocations. It includes almost every other science—chemistry, physics, engineering, mechanics, botany, zoology, bacteriology, mathematics, economics, law, etc. No man can ever learn one one-thousandth part of all there is to know about it. It is an inexhaustible field for research. Our coming generation of farmers should know as much about its fundamental principles as a doctor does about anatomy, physiology, hygeine and medicine.

They should be able to meet and deal with men in other walks of life on as high a footing of intelligent knowledge as these others occupy. They should know, and know that they know more about everything that relates to the farm than other men know. "The trained man wins" in these times—other things being equal.

Secondly: Agricultural Education trains a person to think and teaches him how to investigate and find out. By getting a knowledge of the fundamental principles of soil conditions and of plant and animal life he can understand the needs of his crops and stock better; and use these principles in working out his own problems. He can quicker profit by his successes and remedy his failures because he can with more certainty get at the causes. The ability to correctly deduce the causes from certain obvious results or conditions goes a long way towards successful farming.

Thirdly: In an Agricultural School the students may get the benefit of the knowledge and practical experience of our most successful farmers and of the Experiment Stations all over the country. The U. S. Department of Agriculture is now employing a large number of trained and practically experienced men to go about over the country and learn from the best farmers how they operate their farms to succeed. These men will cull over the vast amount of information they collect in this way and write out the results of their investigations; and then they will show how other men can apply these practices to their conditions. From these sources and from the U. S. and State Experiment Stations information is constantly being sent in to the Agricultural Schools, and can be secured by the students. Besides this there are many valuable books in the school and private libraries to which students have access, and then again, very often good farmers and experts in different lines come to the schools and talk and make demonstrations to the students.

Fourthly: Following what has just been said; an Agricultural Education teaches how and where to get information. I do not remember all I read on Agricultural subjects; but I know where to get information on nearly anything relating to the farm. Would you like to know the best method of getting rid of Johnson grass? Do you know where to find out about the best fertilizers for sugar cane to be made into syrup?

Fifthly: It teaches something of what new crops to take up and how to raise them, and what to leave alone. We are trying Alfalfa, Crimson Clover and Hairy Vetch to see what they can be made to do as forage plants for our section. We also have on trial four different kinds of oats and are going to get as many varieties of cotton and of corn as we can to see if new varieties will give us better yields.

Sixthly: Agricultural Education teaches something about marketing crops. To grade cotton, ship perishable fruits, find a market for sweet potatoes and similar problems are things we want to learn about.

Seventhly: It teaches how to save money by mixing our own fertilizers and composts, by systems of crop rotation, by feeding balanced rations to live stock, etc., etc. A few years ago a fertilizer was put on the market and quantities sold for $28.50 per ton. It was afterward found to contain about $1.50 worth of plant food. A man loses water, fertility and rent on a piece of ground if he has no system of crop rotation that keeps his land occupied all the time.

Eighthly: Agricultural Education deals with the use of new farm implements and machinery. Do you cultivate all your cotton with a single-stock plow, scooter and scrape? You can do better work with the same mule in ⅓ the time. It may save half your field from being taken by grass some time to be worked quickly by some kind of cultivator. Do you know how useful a weeder is? With one mule you can cultivate 18 to 20 acres a day of young stuff. And the cost of these is small compared to the saving of labor and time. These are only two of the many tools and implements taken up by our best farmers.

Ninethly: It prepares young men for positions in experiment stations; as demonstrators for fertilizer and implement manufacturers; as teachers in our common schools—the state examinations for teachers license now include agriculture; and trained Agricultural teachers now get better salaries than others. The supply is limited and the demand is increasing.

Tenthly: It makes better farmers. What kind of a farmer would you have made if you had received an Agricultural Education? It is true that most of our best farmers never saw an Agricultural School, but who can say that they would not have been better farmers if they had studied in one? But I have never heard of a trained agriculturist who has made a failure farming.

Eleventhly: Agricultural Education opens up the beauty and harmony and cleanness and wisdom in God's creations. Some of what we would consider the commonest things are beautiful if we understand them and know how to look at them. God's other creatures live clean lives in harmony with His wonderful wise laws. The great jurist and writer of law commentaries, Blackstone, said that Nature's laws are the will of God.

Gentlemen, it is our duty to educate our children and help educate others. Does not the name of this organization—The Farmers' Educational and Co-operative Union of America—mean educate as well as co.operate? And if we educate is it not best to do so along farming lines? I am firmly convinced that Agricultural Education is the very best way in which to keep our boys on the farm. Already in our small school I have seen it beginning to operate. Some of the greatest and strongest men of our country were reared on the farm. Suppose they had secured an Agricultural Education and had their minds and energies attracted and diverted to the problems of farming instead of to the problems of finance, law, literature politics, etc. What a wonderful uplift they could have given to the whole country! You can't afford to let your children start where you did. If you do, most of them will always be behind the ones who do get an education. Remember that knowledge is power and can't be stolen. And work is a greater pleasure if it is backed by a practical knowledge of the principles underlying the work.

The establishing of this and the other ten schools was a great stride forward in the educational march of our state. It was a running broad jump. But they are not equipped halfway adequately enough. The act did not specifically provide for equipment such as live stock, tools, shops, laboratories, libraries. etc.—not even for furniture. A large amount of the funds for teachers' salaries, etc. has been diverted to these purposes and we are not yet fitted out as we should be. Remember too that about the time we opened the panic was on, and many who subscribed to the building of these schools were unable to pay their subscriptions. In our particular case something like $10,000.00 was not collected. The trustees had counted on using this amount wisely and when it did not come they were greatly hampered. Please allow me to say further that we have had no time and no means with which to drum up the scholars or explain the aims and purposes of the school throughout the district. Our trustees are some of the best business men of the district and consequently they have found it difficult to leave their business and come together. And for good and sufficient reasons they were unable to set the opening day of our school long enough before-hand to give time for canvassing the district for students. This was true when we first opened last spring; again last fall and again this past January.

Some of you have heard that we were not making a practical success of the farm. I have no excuses to make, but I have some explanations. Remember that we opened on Feb. 19th, and that all the breaking of land and planting was done after that, except our oats. Our mules were bought after the middle of January, and the wet weather and moving of furniture kept them out of the field until after our opening. Remember too that all the work was done by boys working 1½ hours a day apiece. Some of these boys were poor farm hands. If we were not with them they would cover or plow up little plants, leave skips, rest at the ends of the rows, etc. And we could not be with a number of boys scattered over the place and in the school room at the same time. Two of the boys did not know how to put the gear on the mules, one of them put the collar on backward and didn't know what was the trouble. I tried to teach one how to plant cotton with a planter, but he forgot while I was away and let the mule go three rounds before he thought of it. He didn't know how much it had skipped and of course I didn't find it out until the other rows showed up. But with all these difficulties, on our 35 acres of cleared land we raised table vegetables; 3 bales of cotton on 3 acres; 35 bushels of corn to the acre; 3 barrels syrup and 5,000 stalks cane for seed on about $\frac{1}{8}$ acre; 800 bushels of sweet potatoes on 3 acres; ground peas enough to fatten 7 large hogs on 3 acres, beside plenty for the boys to eat and seed, one of these hogs 13-months old weighed 359 pounds, cleaned; sufficient oats, pea-vine hay, grass hay and fodder to feed three head of work stock and two cows. Our water-melons and canteloupes were spoken of as the finest. by those who were fortunate enough to taste any of them.

We will have fifty acres in cultivation this year. Many of our vegetables are up and doing nicely in the hot bed; the sweet potato vines are two or three inches long; the oats were badly hurt, but not entirely killed, by the cold; we are just ready to plant cane. The outlook is good and there are yet four months of school. Send your boy or girl in at any time.

Permit me now to say a few words about our courses of study. The last announcement shows only a three-year course, but one more year's work will be added when the students are far enough advanced to take it. These studies, if completed, ought to enable our students to enter the sophomore class at our state College of Agriculture in the State University at Athens. However, most of the agricultural courses are made as practical as possible so that those who cannot go to the University may profit by putting into practice what he learns here. The net profit is a chief consideration in our teaching of farm practices. Of course, we teach all the high school branches: English grammar and literature; spelling and writing, arithmetic, algebra and geometry; United States and general history; commercial and physical geography; civil government, and elementary physics and chemistry. Besides these we prescribe for all a general course in Agriculture and PlantLife, for the girls the courses in Domestic Science, and for the advanced boys (and girls if they choose) the courses in Soils, Horticulture, Field Crops, Animal Husbandry, Biology, Entomology, Botany and Zoology. And now you want to know how we do the teaching. Part of it is done in the school room by the talks or by recitations. Part is done in the field by instructions from the teacher and practice by the student.

THE FRESHMAN, or first year course in Agriculture, takes up Plant Life and a general elementary simple course, covering most of the divisions of farm activity. Plant Life deals with the reproduction of plants from seed; how they come up and develop; the influence of heat, light and moisture; how a plant takes in food and converts it into its own substance; the use of leaves and blossoms; how fruit and seed are formed, and something of different families of plants. The Elementary Agriculture is a course covering such topics as these: Soils, moisture, preparation and cultivation; terracing, draining, fertilizers, manures, green manures, nitrogen from legumes, rotation of crops, a general idea of the cultivation of several field crops and fruit trees; weeds and how to destroy them, plant diseases and how to prevent them, injurious and helpful insects and how to destroy the bad ones; forests, improvement of plants by seed selection; live stock, feeding, breeding and improvement; poultry raising, dairying, etc.

THE INTERMEDIATE, or second year course, takes up Soils and Horticulture and goes more into detail. The soils course follows very closely the text, "Soils," by C. W. Burkett. It includes a practical study of the formation of different soils, what we find in the soil, soil texture, how plants feed, how plant food occurs and is preserved, what tillage does, liming, how bacteria on legumes help to get nitrogen, inoculation with the bacteria, draining, soil water and how it is lost and how it may be held, how to use tillage tools, the cultivation of crops, a study of different implements, stable manure and how to preserve it; chemical fertilizers, and how to mix them, estimate their value and tell what and how much a certain soil needs, how dairying builds up soil, rotation of crops and its effects on soils, what to do for old, worn out soils, etc., etc.

In the course in Horticulture we teach how to grow fruit trees or bushes, planting seed and working over the seedling tree by budding or grafting, transplanting, pruning, spraying for diseases and insects, packing and shipping fruit. A number of different fruits are taken up and studied in this way. Vegetable gardening is also a part of this course.

In the Senior Year we shall take up a careful study of such

Field Crops as are suited to this section of country, viz: Cotton. corn, oats, water melons, sugar cane, tobacco, peas, velvet beans, vetch, clover, alfalfa, sweet potatoes, sorghum, ground peas, etc. A great deal of reading and questioning of good farmers will be expected of the students.

ANIMAL HUSBANDRY teaches of the different breeds of horses, cows, hogs, sheep, poultry, etc., how all live stock may be improved by proper care and selection in breeding them; the practical value of pure bred over scrub stock; the feeding of animals to get the most out of feed at lowest cost; using the separator and incubator, etc.; animal diseases and parasites, and simple remedies.

ENTOMOLOGY treats of insects. We shall study those that are most harmful to us, such as San Jose scale, plant lice, cut worms, peach tree borers, potato bugs, mosquitoes, house flies and others. Then we shall take up some of the useful ones, such as the tiger beetles, dragon flies and lady birds. How to destroy or prevent the harmful ones will be the main point here.

The courses in Biology, Zoology and Botany will be technical.

We need your sympathy, support, advice, information, boys and girls. We can learn many, many things. You wouldn't miss one of the hens or pigs or cows, or some of those fine seed or young fruit trees. We would prize any of these very highly. We are in pressing need of all these things and come to you with the request that you help your school by sending something of this kind; or any other kind for that matter—an axe handle or cotton basket, anything useful or ornamental.

Department of Household Economics

BY MISS RUSSELL LASSETER.

Household economics includes a study of those subjects which have a direct bearing on the life and administration of the home.

The aim of the work in this department is to give such practical and scientific knowledge as will fit young women to become intelligent and efficient house-keepers. Why should not the home-maker be as alert to make progress in her life work as the business or professional man?

The work of this department is divided into two parts—Domestic Science and Domestic Arts.

Domestic Science.

Two courses are offered in Domestic Science. I. Course in Domestic Economy, including:

(1) PLAIN COOKING—"The kitchen has been called 'the pulse of the home,' and it would seem a good simile, for when things go wrong in the kitchen the trouble is apt to extend all through the house." Whether a girl intends to cook in her own home or to superintend the cooking, is it not very important that she understands the "whys" and "whereofs"—why all starchy foods should be put on in boiling water and cooked a long time; how to make the coffee clear and sparkling with a delicious aroma, instead of serving a cup of muddy looking water with a disagreeable flavor? And when the bread fails to rise she should understand that it is not simply a freak of nature, but that there was a real cause to which the failure was due. We believe that the "health and strength of a person depends largely upon what passes through his mouth, that even the turn of his thinking is modified by what he eats."

(2) FOODS—Study of food materials; classification, composition and nutritive value; relation of food to the body, diges-

tion and assimilation; effect of heat on food principles.

(3) WAITRESSES COURSE Planning and serving of meals.

(4) HOUSE-HOLD HYGIENE—Care of the home; sweeping, dusting, cleaning and polishing of floors and surfaces; ventilating, lighting, heating.

(5) Physiology of Human body.

II. Second Year Course in Domestic Science, including:

(1) Advanced cookery and invalid cookery.

(2) FOODS—Production and manufacture of food products, such as dairy, cereals, flour, sugar, etc.; food adulterations, marketing.

(3) STUDY OF DIETARIES—Planning and serving of meals according to dietary standards.

(4) BACTERIOLOGY—Bacteria of water, milk and other foods. Relation of bacteria to preserving and disease.

(5) Physics of heat and light as related to cookery.

(6) HOUSEHOLD MANAGEMENT—The house, its situation, structure, drainage, plumbing, etc.; furnishing, decoration and care.

A fee of $2.00 is required of every student taking First Course, and a fee of $2.50 is required of every student taking Second Year's Course. This money is used to buy the food material for the cooking lessons. Of course the girls eat what they cook.

No student can take Second Course without having completed First Course.

Domestic Art.

I. FIRST YEAR COURSE.

(1) Samples of all stitches used in plain sewing.

(2) Patching, mending and darning, finishing seams and button-holes.

(3) Machine sewing.

(4) Cutting of undergarments from patterns; fitting and finishing of garments.

II. Second Year Course.

(1) Making of plain shirt waist suit.
(2) Making of plain woolen skirt with drop lining.
(3) Making of their summer dress.

No student can take Second Year Course without having completed First Year Course.

We have been working under many disadvantages this year. The school being in its infancy, has not been supplied with necessary equipment to do the work. The training dining-room has not been supplied with any furniture or table-ware.

We hope to have a full equipment next year, in order that the pupils may get the full benefit of the courses.

Syracuse,
21, 1908